

SEQUENCE LISTING

<110> Birkett, Ashley J.

<120> IMMUNOGENIC HBc CHIMER PARTICLES HAVING ENHANCED STABILITY

<130> 4564/81175 ICC-102.2

<140> NOT YET ASSIGNED

<141> 2001-08-15

<150> 60/226,867

<151> 2000-08-22

<150> 60/225,843

<151> 2000-08-16

<160> 313

<170> PatentIn Ver. 2.1

<210> 1

<211> 16

<212> PRT

<213> Plasmodium falciparum

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<212> PRT

<213> Plasmodium falciparum

<400> 2

Glu	Tyr	Leu	Asn	Lys	Ile	Gln	Asn	Ser	Leu	Ser	Thr	Glu	Trp	Ser	Pro
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Ala	Ser	Val	Thr
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<212> PRT

<213> Streptococcus pneumoniae

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Lys	Leu	Glu	Glu	Leu	Ser	Asp	Lys	Ile	Asp	Glu	Leu	Asp	Ala	Glu
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<211> 35

<212> PRT

<213> Streptococcus pneumoniae

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 Gln Lys Lys Tyr Asp Glu Asp Gln Lys Lys Thr Glu Glu Lys Ala Ala
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 Leu Glu Lys Ala Ala Ser Glu Glu Met Asp Lys Ala Val Ala Ala Val
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 Gln Gln Ala
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<210> 5
 <211> 27
 <212> PRT
 <213> Cryptosporidium parvum

<400> 5
 Gln Asp Lys Pro Ala Asp Ala Pro Ala Ala Glu Ala Pro Ala Ala Glu
 1 5 10 15
 Pro Ala Ala Gln Gln Asp Lys Pro Ala Asp Ala
 20 25

<210> 6
 <211> 17
 <212> PRT
 <213> Human immunodeficiency virus type 1

<400> 6
 Arg Lys Arg Ile His Ile Gly Pro Gly Arg Ala Phe Tyr Ile Thr Lys
 1 5 10 15
 Asn

<210> 7
 <211> 31
 <212> PRT
 <213> Foot-and-mouth disease virus

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 Tyr Asn Gly Glu Cys Arg Tyr Asn Arg Asn Ala Val Pro Asn Leu Arg
 1 5 10 15
 Gly Asp Leu Gln Val Leu Ala Gln Lys Val Ala Arg Thr Leu Pro
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<210> 8
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 <213> Influenza A virus

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 Tyr Arg Asn Leu Leu Trp Leu Thr Glu Lys
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<210> 9
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<400> 9
 Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Cys
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 Arg Cys Asn Gly Ser Ser Asp
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 <211> 23
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 <213> Influenza A virus

<400> 10
 Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Cys
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 Arg Cys Asn Asp Ser Ser Asp
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<210> 11
 <211> 142
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 <213> Yersinia pestis

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 Asp Ile Leu Lys Val Ile Val Asp Ser Met Asn His His Gly Asp Ala
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 Arg Ser Lys Leu Arg Glu Glu Leu Ala Glu Leu Thr Ala Glu Leu Lys
 20 25 30
 Ile Tyr Ser Val Ile Gln Ala Glu Ile Asn Lys His Leu Ser Ser Ser
 35 40 45
 Gly Thr Ile Asn Ile His Asp Lys Ser Ile Asn Leu Met Asp Lys Asn
 50 55 60
 Leu Tyr Gly Tyr Thr Asp Glu Glu Ile Phe Lys Ala Ser Ala Glu Tyr
 65 70 75 80
 Lys Ile Leu Glu Lys Met Pro Gln Thr Thr Ile Gln Val Asp Gly Ser
 85 90 95
 Glu Lys Lys Ile Val Ser Ile Lys Asp Phe Leu Gly Ser Glu Asn Lys
 100 105 110
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 115 120 125
 Asp Asn Asn Glu Leu Ser His Phe Ala Thr Thr Cys Ser Asp
 130 135 140

<210> 12
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 <213> Haemophilus influenzae

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 Cys Ser Ser Ser Asn Asn Asp Ala Ala Gly Asn Gly Ala Ala Gln Phe
 1 5 10 15

Gly Gly Tyr

<210> 13
 <211> 11
 <212> PRT
 <213> Haemophilus influenzae

<400> 13
 Asn Lys Leu Gly Thr Val Ser Tyr Gly Glu Glu
 1 5 10

<210> 14
 <211> 16
 <212> PRT
 <213> Haemophilus influenzae

<400> 14
 Asn Asp Glu Ala Ala Tyr Ser Lys Asn Arg Arg Ala Val Leu Ala Tyr
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<210> 15
 <211> 28
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 <213> Moraxella catarrhalis

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 Leu Asp Ile Glu Lys Asp Lys Lys Lys Arg Thr Asp Glu Gln Leu Gln
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Ala Glu Leu Asp Asp Lys Tyr Ala Gly Lys Gly Tyr
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<210> 16
 <211> 28
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 <213> Moraxella catarrhalis

<400> 16
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 1 5 10 15

Ala Glu Leu Asp Asp Lys Tyr Ala Gly Lys Gly Tyr
 20 25

<210> 17
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 <212> PRT
 <213> Moraxella catarrhalis

<400> 17
 Ile Asp Ile Glu Lys Lys Gly Lys Ile Arg Thr Glu Ala Leu Leu Ala
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 Glu Leu Asn Lys Asp Tyr Pro Gly Gln Gly Tyr
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<210> 18
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 <212> PRT
 <213> Porphyromonas gingivalis

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 Gly Val Ser Pro Lys Val Cys Lys Asp Val Thr Val Glu Gly Ser Asn
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 Glu Phe Ala Pro Val Gln Asn Leu Thr
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<210> 19
 <211> 20
 <212> PRT
 <213> Porphyromonas gingivalis

<400> 19
 Arg Ile Gln Ser Thr Trp Arg Gln Lys Thr Val Asp Leu Pro Ala Gly
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 Thr Lys Tyr Val
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<210> 20
 <211> 21
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 <213> Trypanosoma cruzi

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 1 5 10 15
 Ala Thr Ala Pro Ala
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<210> 21
 <211> 24
 <212> PRT
 <213> Plasmodium falciparum

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<210> 22
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Asn Ala Asn Pro
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<210> 23
 <211> 20
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Asn Ala Asn Pro
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<210> 24
 <211> 28
 <212> PRT
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<210> 25
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<400> 25
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Asn Pro Asn Val
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<210> 26
 <211> 22
 <212> PRT
 <213> Plasmodium falciparum

<400> 26
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 1 5 10 15

 Asn Pro Asn Val Asp Pro
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<210> 27
 <211> 24
 <212> PRT
 <213> Plasmodium falciparum

<400> 27
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 Asn Pro Asn Val Asp Pro Asn Ala
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<210> 28
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<400> 28
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 Asn Val

<210> 29
 <211> 20
 <212> PRT
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<400> 29
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 1 5 10 15

 Asn Val Asp Pro
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<210> 30
 <211> 22
 <212> PRT
 <213> Plasmodium falciparum

<400> 30
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 1 5 10 15

Asn Val Asp Pro Asn Ala
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<210> 31
 <211> 16
 <212> PRT
 <213> Plasmodium falciparum

<400> 31
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<210> 32
 <211> 18
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<400> 32
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 1 5 10 15

Asp Pro

<210> 33
 <211> 20
 <212> PRT
 <213> Plasmodium falciparum

<400> 33
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 1 5 10 15

Asp Pro Asn Ala
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<210> 34
 <211> 19
 <212> PRT
 <213> Plasmodium vivax

<400> 34
 Gly Asp Arg Ala Asp Gly Gln Pro Ala Gly Asp Arg Ala Asp Gly Gln
 1 5 10 15

Pro Ala Gly

<210> 35
 <211> 18
 <212> PRT
 <213> Plasmodium vivax

<400> 35

Arg Ala Asp Asp Arg Ala Ala Gly Gln Pro Ala Gly Asp Gly Gln Pro
1 5 10 15

Ala Gly

<210> 36

<211> 18

<212> PRT

<213> Plasmodium vivax

<400> 36

Ala Asn Gly Ala Gly Asn Gln Pro Gly Ala Asn Gly Ala Gly Asp Gln
1 5 10 15

Pro Gly

<210> 37

<211> 18

<212> PRT

<213> Plasmodium vivax

<400> 37

Ala Asn Gly Ala Asp Asn Gln Pro Gly Ala Asn Gly Ala Asp Asp Gln
1 5 10 15

Pro Gly

<210> 38

<211> 18

<212> PRT

<213> Plasmodium vivax

<400> 38

Ala Asn Gly Ala Gly Asn Gln Pro Gly Ala Asn Gly Ala Asp Asn Gln
1 5 10 15

Pro Gly

<210> 39

<211> 18

<212> PRT

<213> Plasmodium vivax

<400> 39

Ala Asn Gly Ala Asp Asn Gln Pro Gly Ala Asn Gly Ala Asp Asp Gln
1 5 10 15

Pro Gly

<210> 40
 <211> 22
 <212> PRT
 <213> Plasmodium vivax

<400> 40
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 1 5 10 15
 Gln Glu Gly Gly Ala Ala
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<210> 41
 <211> 16
 <212> PRT
 <213> Plasmodium berghei

<400> 41
 Asp Pro Pro Pro Pro Asn Pro Asn Asp Pro Pro Pro Pro Asn Pro Asn
 1 5 10 15

<210> 42
 <211> 24
 <212> PRT
 <213> Plasmodium yoelii

<400> 42
 Gln Gly Pro Gly Ala Pro Gln Gly Pro Gly Ala Pro Gln Gly Pro Gly
 1 5 10 15
 Ala Pro Gln Gly Pro Gly Ala Pro
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<210> 43
 <211> 15
 <212> PRT
 <213> Streptococcus sobrinus

<400> 43
 Lys Pro Arg Pro Ile Tyr Glu Ala Lys Leu Ala Gln Asn Gln Lys
 1 5 10 15

<210> 44
 <211> 16
 <212> PRT
 <213> Streptococcus sobrinus

<400> 44
 Ala Lys Ala Asp Tyr Glu Ala Lys Leu Ala Gln Tyr Glu Lys Asp Leu
 1 5 10 15

<210> 45
 <211> 9
 <212> PRT
 <213> Shigella flexneri

<400> 45
 Lys Asp Arg Thr Leu Ile Glu Gln Lys
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<210> 46
 <211> 15
 <212> PRT
 <213> respiratory syncytial virus

<400> 46
 Cys Ser Ile Cys Ser Asn Asn Pro Thr Cys Trp Ala Ile Cys Lys
 1 5 10 15

<210> 47
 <211> 25
 <212> PRT
 <213> Entamoeba histolytica

<400> 47
 Val Glu Cys Ala Ser Thr Val Cys Gln Asn Asp Asn Ser Cys Pro Ile
 1 5 10 15

 Ile Ala Asp Val Glu Lys Cys Asn Gln
 20 25

<210> 48
 <211> 34
 <212> PRT
 <213> Schistosoma japonicum

<400> 48
 Asp Leu Gln Ser Glu Ile Ser Leu Ser Leu Glu Asn Gly Glu Leu Ile
 1 5 10 15

 Arg Arg Ala Lys Ser Ala Glu Ser Leu Ala Ser Glu Leu Gln Arg Arg
 20 25 30

 Val Asp

<210> 49
 <211> 34
 <212> PRT
 <213> Schistosoma mansoni

<400> 49
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 1 5 10 15

 Arg Arg Ala Lys Ala Ala Glu Ser Leu Ala Ser Asp Leu Gln Arg Arg
 20 25 30

 Val Asp

<210> 50
 <211> 16
 <212> PRT
 <213> Human immunodeficiency virus

<400> 50
 Gly Pro Lys Glu Pro Phe Arg Asp Tyr Val Asp Arg Phe Tyr Lys Cys
 1 5 10 15

<210> 51
 <211> 17
 <212> PRT
 <213> Corynebacterium diphtheriae

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 Phe Gln Val Val His Asn Ser Tyr Asn Arg Pro Ala Tyr Ser Pro Gly
 1 5 10 15

Cys

<210> 52
 <211> 25
 <212> PRT
 <213> Borrelia burgdorferi

<400> 52
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 1 5 10 15

Asn Gly Lys Val Thr Val Ser Leu Cys
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<210> 53
 <211> 19
 <212> PRT
 <213> Borrelia burgdorferi

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 Thr Leu Ser Lys Asn Ile Ser Lys Ser Gly Glu Val Ser Val Glu Leu
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Asn Asp Cys

<210> 54
 <211> 11
 <212> PRT
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<400> 54
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<210> 55
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 <213> Trypanosoma cruzi

<400> 55
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 1 5 10 15

 Ser Gly Asn Thr Cys
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<210> 56
 <211> 16
 <212> PRT
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<400> 56
 Ser Val Gln Ile Pro Lys Val Pro Tyr Pro Asn Gly Ile Val Tyr Cys
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<210> 57
 <211> 16
 <212> PRT
 <213> Plasmodium falciparum

<400> 57
 Asp Phe Asn His Tyr Tyr Thr Leu Lys Thr Gly Leu Glu Ala Asp Cys
 1 5 10 15

<210> 58
 <211> 18
 <212> PRT
 <213> Plasmodium falciparum

<400> 58
 Pro Ser Asp Lys His Ile Glu Gln Tyr Lys Lys Ile Lys Asn Ser Ile
 1 5 10 15

Ser Cys

<210> 59
 <211> 20
 <212> PRT
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<400> 59
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Cys Ser Val Thr
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<210> 60
 <211> 19
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 1 5 10 15

Ser Val Thr

<210> 61
 <211> 16
 <212> PRT
 <213> Streptococcus sobrinus

<400> 61
 Lys Pro Arg Pro Ile Tyr Glu Ala Lys Leu Ala Gln Asn Gln Lys Cys
 1 5 10 15

<210> 62
 <211> 17
 <212> PRT
 <213> Streptococcus sobrinus

<400> 62
 Ala Lys Ala Asp Tyr Glu Ala Lys Leu Ala Gln Tyr Glu Lys Asp Leu
 1 5 10 15

Cys

<210> 63
 <211> 16
 <212> PRT
 <213> Lymphocytic choriomeningitis virus

<400> 63
 Arg Pro Gln Ala Ser Gly Val Tyr Met Gly Asn Leu Thr Ala Gln Cys
 1 5 10 15

<210> 64
 <211> 16
 <212> PRT
 <213> Clostridium tetani

<400> 64
 Gln Tyr Ile Lys Ala Asn Ser Lys Phe Ile Gly Ile Thr Glu Leu Cys
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<210> 65
 <211> 18
 <212> DNA
 <213> plasmid pKK223

<210> 72
 <211> 31
 <212> DNA
 <213> Hepatitis B virus

 <400> 72
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 <210> 73
 <211> 39
 <212> DNA
 <213> Hepatitis B virus

 <400> 73
 cgcgaattca aaaagagctc ccagcgtcta gagacctag 39

 <210> 74
 <211> 39
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 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: human
 cytochrome P450

 <400> 74
 caagaaaaac agctagacga aaacgcaaatt gtacagctc 39

 <210> 75
 <211> 42
 <212> DNA
 <213> Hepatitis B virus

 <400> 75
 cgcaagctta gagctcttga attccaacaa cagtagtctc cg 42

 <210> 76
 <211> 28
 <212> DNA
 <213> Hepatitis B virus

 <400> 76
 cgcgagctcc cagcgtctag agacctag 28

 <210> 77
 <211> 17
 <212> DNA
 <213> plasmid pKK223

 <400> 77
 gtatcaggct gaaaatc 17

<210> 78
 <211> 19
 <212> PRT
 <213> Plasmodium falciparum

<400> 78
 Ile Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn
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Pro Glu Leu

<210> 79
 <211> 57
 <212> DNA
 <213> Plasmodium falciparum

<400> 79
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<210> 80
 <211> 49
 <212> DNA
 <213> Plasmodium falciparum

<400> 80
 ccggattagc gttcggatta gcgttcggat tagcggttcgg attagcggt 49

<210> 81
 <211> 31
 <212> PRT
 <213> Plasmodium falciparum

<400> 81
 Ile Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn
 1 5 10 15

Pro Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Glu Leu
 20 25 30

<210> 82
 <211> 93
 <212> DNA
 <213> Plasmodium falciparum

<400> 82
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 tccgaacggt gaccggaacg ctaatccgga gct 93

<210> 83
 <211> 91
 <212> DNA
 <213> Plasmodium falciparum

<400> 83
ggagctccgg attagcggtc ggggtcaacgt tcggattagc gttcggatta gcgttcggat 60
tagcggttcgg gtcaacggtc ggattagcgt t 91

<210> 84
<211> 23
<212> PRT
<213> Plasmodium falciparum

<400> 84
Ile Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn
1 5 10 15
Pro Asn Ala Asn Pro Glu Leu
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<210> 85
<211> 69
<212> DNA
<213> Plasmodium falciparum

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aattaacgcg aatccgaacg tggatccgaa tgccaaccct aacgccaacc caaatgcgaa 60
cccagagct 69

<210> 86
<211> 61
<212> DNA
<213> Plasmodium falciparum

<400> 86
ctgggttcgc atttgggttg gcgttaggggt tggcattcgg atccacgttc ggattcgcgt 60
t 61

<210> 87
<211> 23
<212> PRT
<213> Plasmodium falciparum

<400> 87
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<211> 69
<212> DNA
<213> Plasmodium falciparum

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cccagagct 69

<210> 89
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 <212> DNA
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<400> 89
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 t 61

<210> 90
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 20 25 30

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 cccgaatggt gaccccaatg ccaatccgga gct 93

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 <211> 85
 <212> DNA
 <213> Plasmodium falciparum

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 ttggatccac gttcggattc gcggtt 85

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 <212> PRT
 <213> Plasmodium falciparum

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 Ala Asn Pro Asn Val Glu Leu
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<210> 94
 <211> 69
 <212> DNA
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tgttgagct 69

<210> 95
<211> 61
<212> DNA
<213> Plasmodium falciparum

<400> 95
caacattcgg gttggcgttt ggattagcgt taggggtggc atttgatcc acgttcggat 60
t 61

<210> 96
<211> 25
<212> PRT
<213> Plasmodium falciparum

<400> 96
Ile Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
1 5 10 15
Ala Asn Pro Asn Val Asp Pro Glu Leu
20 25

<210> 97
<211> 75
<212> DNA
<213> Plasmodium falciparum

<400> 97
aattaatccg aacgtggatc caaatgccaa ccctaacgct aatccaaacg ccaacccgaa 60
tgttgaccct gagct 75

<210> 98
<211> 67
<212> DNA
<213> Plasmodium falciparum

<400> 98
caggtcaac attcgggttg gcgtttggat tagcgtagg gttggcattt ggatccacgt 60
tcggtt 67

<210> 99
<211> 27
<212> PRT
<213> Plasmodium falciparum

<400> 99
Ile Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
1 5 10 15
Ala Asn Pro Asn Val Asp Pro Asn Ala Glu Leu
20 25

<210> 100
 <211> 81
 <212> DNA
 <213> Plasmodium falciparum

<400> 100
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 tgttgaccct aatgctgagc t 81

<210> 101
 <211> 73
 <212> DNA
 <213> Plasmodium falciparum

<400> 101
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 ccacgttcgg att 73

<210> 102
 <211> 21
 <212> PRT
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<400> 102
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 1 5 10 15
 Pro Asn Val Glu Leu
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<210> 103
 <211> 63
 <212> DNA
 <213> Plasmodium falciparum

<400> 103
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 gct 63

<210> 104
 <211> 55
 <212> DNA
 <213> Plasmodium falciparum

<400> 104
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<210> 105
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<400> 105

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Pro Asn Val Asp Pro Glu Leu
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<210> 106

<211> 69

<212> DNA

<213> Plasmodium falciparum

<400> 106

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<210> 107

<211> 61

<212> DNA

<213> Plasmodium falciparum

<400> 107

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<210> 108

<211> 25

<212> PRT

<213> Plasmodium falciparum

<400> 108

Ile Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn
1 5 10 15

Pro Asn Val Asp Pro Asn Ala Glu Leu
20 25

<210> 109

<211> 75

<212> DNA

<213> Plasmodium falciparum

<400> 109

aattaacgtg gatccaaatg ccaaccctaa cgctaatacca aacgcccaacc cgaatgttga 60
ccctaattgct gagct 75

<210> 110

<211> 67

<212> DNA

<213> Plasmodium falciparum

<400> 110

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<210> 111
 <211> 19
 <212> PRT
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<400> 111
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Val Glu Leu

<210> 112
 <211> 57
 <212> DNA
 <213> Plasmodium falciparum

<400> 112
 aattgatcca aatgccaacc ctaacgctaa tccaaacgcc aaccggaatg ttgagct 57

<210> 113
 <211> 49
 <212> DNA
 <213> Plasmodium falciparum

<400> 113
 caacattcgg gttggcgttt ggattagcgt taggggttggc atttgatc 49

<210> 114
 <211> 21
 <212> PRT
 <213> Plasmodium falciparum

<400> 114
 Ile Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
 1 5 10 15

Val Asp Pro Glu Leu
 20

<210> 115
 <211> 63
 <212> DNA
 <213> Plasmodium falciparum

<400> 115
 aattgatcca aatgccaacc ctaacgctaa tccaaacgcc aaccggaatg ttgaccctga 60
 gct 63

<210> 116
 <211> 55
 <212> DNA
 <213> Plasmodium falciparum

<400> 116
 caggggtcaac attcgggttg gcgtttggat tagcgtagg gttggcattt ggatc 55

<210> 117
 <211> 23
 <212> PRT
 <213> Plasmodium falciparum

<400> 117
 Ile Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
 1 5 10 15
 Val Asp Pro Asn Ala Glu Leu
 20

<210> 118
 <211> 69
 <212> DNA
 <213> Plasmodium falciparum

<400> 118
 aattgatcca aatgccaacc ctaacgctaa tccaaacgcc aaccggaatg ttgaccctaa 60
 tgccgagct 69

<210> 119
 <211> 61
 <212> DNA
 <213> Plasmodium falciparum

<400> 119
 cggcattagg gtcaacattc gggttggcgt ttggattagc gttaggggtg gcatttggat 60
 c 61

<210> 120
 <211> 21
 <212> PRT
 <213> Plasmodium falciparum

<400> 120
 Ile Glu Tyr Leu Asn Lys Ile Gln Asn Ser Leu Ser Thr Glu Trp Ser
 1 5 10 15
 Pro Cys Ser Val Thr
 20

<210> 121
 <211> 69
 <212> DNA
 <213> Plasmodium falciparum

<400> 121
 aattgaatat ctgaacaaaa tccagaactc tctgtccacc gaatggcttc cgtgctccgt 60
 tacctagta 69

<210> 122
 <211> 69
 <212> DNA
 <213> Plasmodium falciparum

<400> 122
 agcttactag gtaacggagc acggagacca ttcggtggac agagagttct ggattttgtt 60
 cagatatc 69

<210> 123
 <211> 24
 <212> PRT
 <213> Plasmodium vivax

<400> 123
 Ile Pro Ala Gly Asp Arg Ala Asp Gly Gln Pro Ala Gly Asp Arg Ala
 1 5 10 15
 Ala Gly Gln Pro Ala Gly Glu Leu
 20

<210> 124
 <211> 72
 <212> DNA
 <213> Plasmodium vivax

<400> 124
 aattccggct ggtgaccgtg cagatggcca gccagcgggt gaccgcgctg caggccagcc 60
 ggctggcgag ct 72

<210> 125
 <211> 64
 <212> DNA
 <213> Plasmodium vivax

<400> 125
 cgccagccgg ctggcctgca gcgcgggtcac ccgctggctg gccatctgca cggtcaccag 60
 ccgg 64

<210> 126
 <211> 21
 <212> PRT
 <213> Plasmodium vivax

<400> 126
 Ile Asp Arg Ala Ala Gly Gln Pro Ala Gly Asp Arg Ala Asp Gly Gln
 1 5 10 15
 Pro Ala Gly Glu Leu
 20

<210> 127
 <211> 63
 <212> DNA
 <213> Plasmodium vivax

<400> 127
aattgacaga gcagccggac aaccagcagg cgatcgagca gacggacagc ccgcagggga 60
gct 63

<210> 128
<211> 55
<212> DNA
<213> Plasmodium vivax

<400> 128
cccctgcggg ctgtccgtct gctcgatcgc ctgctggttg tccggctgct ctgtc 55

<210> 129
<211> 21
<212> PRT
<213> Plasmodium vivax

<400> 129
Ile Ala Asn Gly Ala Gly Asn Gln Pro Gly Ala Asn Gly Ala Gly Asp
1 5 10 15
Gln Pro Gly Glu Leu
20

<210> 130
<211> 63
<212> DNA
<213> Plasmodium vivax

<400> 130
aattgcgaac ggcgccggta atcagccggg ggcaaacggc gcgggtgatc aaccagggga 60
gct 63

<210> 131
<211> 55
<212> DNA
<213> Plasmodium vivax

<400> 131
cccctggttg atcacccgcg ccgtttgccc ccggctgatt accggcgccg ttcgc 55

<210> 132
<211> 21
<212> PRT
<213> Plasmodium vivax

<400> 132
Ile Ala Asn Gly Ala Asp Asn Gln Pro Gly Ala Asn Gly Ala Asp Asp
1 5 10 15
Gln Pro Gly Glu Leu
20

<210> 133
 <211> 63
 <212> DNA
 <213> Plasmodium vivax

<400> 133
 aattgcgaac ggcgccgata atcagccggg tgcaaacggg gcggatgacc aaccaggcga 60
 gct 63

<210> 134
 <211> 55
 <212> DNA
 <213> Plasmodium vivax

<400> 134
 cgcttggtg gtcacccgcc ccgtttgcac ccggctgatt atcggcgccg ttccgc 55

<210> 135
 <211> 39
 <212> PRT
 <213> Plasmodium vivax

<400> 135
 Ile Ala Asn Gly Ala Gly Asn Gln Pro Gly Ala Asn Gly Ala Gly Asp
 1 5 10 15
 Gln Pro Gly Ala Asn Gly Ala Asp Asn Gln Pro Gly Ala Asn Gly Ala
 20 25 30
 Asp Asp Gln Pro Gly Glu Leu
 35

<210> 136
 <211> 117
 <212> DNA
 <213> Plasmodium vivax

<400> 136
 aattgcgaac ggcgccggtg atcagccggg agcaaacggc gcgggggatc aaccaggcgc 60
 caatggtgca gacaaccagc ctggggcgaa tggagccgat gaccaaccgc gcgagct 117

<210> 137
 <211> 109
 <212> DNA
 <213> Plasmodium vivax

<400> 137
 cgccggggtg gtcacccggt ccattcgccc caggctggtt gtctgcacca ttggcgcttg 60
 gttgatcccc cgcgcggtt gctcccggtt gattaccggc gccgttcgc 109

<210> 138
 <211> 25
 <212> PRT
 <213> Plasmodium vivax

<400> 138

Ile Ala Pro Gly Ala Asn Gln Glu Gly Gly Ala Ala Ala Pro Gly Ala
1 5 10 15

Asn Gln Glu Gly Gly Ala Ala Glu Leu
20 25

<210> 139

<211> 75

<212> DNA

<213> Plasmodium vivax

<400> 139

aattgcgccg ggcgcccaacc aggaagggtgg ggctgcagcg ccaggagcca atcaagaagg 60
cggctgcagcg gagct 75

<210> 140

<211> 67

<212> DNA

<213> Plasmodium vivax

<400> 140

ccgctgcacc gccttcttga ttggctcctg gcgctgcagc cccaccttcc tggttggcgc 60
cggcgc 67

<210> 141

<211> 21

<212> PRT

<213> Plasmodium vivax

<400> 141

Ile Glu Tyr Leu Asp Lys Val Arg Ala Thr Val Gly Thr Glu Trp Thr
1 5 10 15

Pro Cys Ser Val Thr
20

<210> 142

<211> 69

<212> DNA

<213> Plasmodium vivax

<400> 142

aattgaatat ctggataaag tgcgtgcgac cggtggcacg gaatggactc cgtgcagcgt 60
gacctaata 69

<210> 143

<211> 69

<212> DNA

<213> Plasmodium vivax

<400> 143

agcttattag gtcacgctgc acggagtcca ttccgtgcca acggtcgcac gcactttatc 60
cagatattc 69

<210> 144
<211> 10
<212> PRT
<213> Plasmodium falciparum

<400> 144
Thr Val Ser Ala Pro Ser Trp Glu Thr Ser
1 5 10

<210> 145
<211> 42
<212> DNA
<213> Plasmodium falciparum

<400> 145
gccaagctta ctaggtaacg gaggccggag accattcggg gg 42

<210> 146
<211> 44
<212> DNA
<213> Plasmodium vivax

<400> 146
cgcggaattca agcgaacggc gccgataatc agccggcggg tgca 44

<210> 147
<211> 8
<212> PRT
<213> Hepatitis B virus

<400> 147
Cys Val Val Thr Thr Glu Pro Leu
1 5

<210> 148
<211> 37
<212> DNA
<213> Hepatitis B virus

<400> 148
cgcaagctta ctagcaaaca acagtagtct ccggaag 37

<210> 149
<211> 7
<212> PRT
<213> Hepatitis B virus

<400> 149
Pro Leu Thr Ser Leu Ile Pro
1 5

<210> 150
<211> 32
<212> DNA
<213> Hepatitis B virus

<400> 150
cgcaagctta cggaagtgtt gataggatag gg

32

<210> 151
<211> 8
<212> PRT
<213> Hepatitis B virus

<400> 151
Thr Ser Leu Ile Pro Ala Asn Pro
1 5

<210> 152
<211> 34
<212> DNA
<213> Hepatitis B virus

<400> 152
cgcaagctta tggtgatagg ataggggcat ttgg

34

<210> 153
<211> 7
<212> PRT
<213> Hepatitis B virus

<400> 153
Leu Ile Pro Ala Asn Pro Pro
1 5

<210> 154
<211> 31
<212> DNA
<213> Hepatitis B virus

<400> 154
cgcaagctta taggataggg gcatttggtg g

31

<210> 155
<211> 6
<212> PRT
<213> Hepatitis B virus

<400> 155
Ile Pro Ala Asn Pro Pro
1 5

<210> 156
<211> 28
<212> DNA
<213> Hepatitis B virus

<400> 156
gcgaagctta gataggggca ttggtg

28

<210> 157
 <211> 6
 <212> PRT
 <213> Hepatitis B virus

<400> 157
 Pro Ala Asn Pro Pro Arg
 1 5

<210> 158
 <211> 28
 <212> DNA
 <213> Hepatitis B virus

<400> 158
 cgcaagctta aggggcattt ggtggtct

28

<210> 159
 <211> 7
 <212> PRT
 <213> Hepatitis B virus

<400> 159
 Cys Pro Ala Asn Pro Pro Arg
 1 5

<210> 160
 <211> 7
 <212> PRT
 <213> Hepatitis B virus

<400> 160
 Ala Asn Pro Pro Arg Tyr Ala
 1 5

<210> 161
 <211> 31
 <212> DNA
 <213> Hepatitis B virus

<400> 161
 gcgaagctta gcaaggggca tttggtggtc t

31

<210> 162
 <211> 30
 <212> DNA
 <213> Hepatitis B virus

<400> 162
 gcgaagctta ggcatttggt ggtctatagc

30

<210> 163
<211> 8
<212> PRT
<213> Hepatitis B virus

<400> 163
Cys Ala Asn Pro Pro Arg Tyr Ala
1 5

<210> 164
<211> 32
<212> DNA
<213> Hepatitis B virus

<400> 164
gcgaagctta gcaggcattt ggtggtctat aa 32

<210> 165
<211> 7
<212> PRT
<213> Hepatitis B virus

<400> 165
Asn Pro Pro Arg Tyr Ala Pro
1 5

<210> 166
<211> 31
<212> DNA
<213> Hepatitis B virus

<400> 166
cgcaagctta atttggtggt ctataagctg g 31

<210> 167
<211> 8
<212> PRT
<213> Plasmodium falciparum

<400> 167
Asn Ala Asn Pro Asn Val Asp Pro
1 5

<210> 168
<211> 6
<212> PRT
<213> Homo sapiens

<400> 168
Asn Tyr Lys Lys Pro Lys
1 5

<210> 169
 <211> 7
 <212> PRT
 <213> Hepatitis B virus

<400> 169
 Lys Arg Gly Pro Arg Thr His
 1 5

<210> 170
 <211> 21
 <212> PRT
 <213> Homo sapiens

<400> 170
 Leu His Pro Asp Glu Thr Lys Asn Met Leu Glu Met Ile Phe Thr Pro
 1 5 10 15

Arg Asn Ser Asp Arg
 20

<210> 171
 <211> 5
 <212> PRT
 <213> Human immunodeficiency virus type 1

<400> 171
 Arg Ile Lys Gln Ile
 1 5

<210> 172
 <211> 11
 <212> PRT
 <213> Human immunodeficiency virus type 1

<400> 172
 Arg Ile Lys Gln Ile Gly Met Pro Gly Gly Lys
 1 5 10

<210> 173
 <211> 10
 <212> PRT
 <213> Human immunodeficiency virus type 1

<400> 173
 Leu Leu Glu Leu Asp Lys Trp Ala Ser Leu
 1 5 10

<210> 174
 <211> 14
 <212> PRT
 <213> Human immunodeficiency virus type 1

<400> 174
 Glu Gln Glu Leu Leu Glu Leu Asp Lys Trp Ala Ser Leu Trp
 1 5 10

<210> 175
 <211> 33
 <212> PRT
 <213> Human immunodeficiency virus type 1

<400> 175
 Val Gln Gln Gln Asn Asn Leu Leu Arg Ala Ile Glu Ala Gln Gln His
 1 5 10 15
 Leu Leu Gln Leu Thr Val Trp Gly Ile Lys Gln Leu Gln Ala Arg Ile
 20 25 30
 Leu

<210> 176
 <211> 16
 <212> PRT
 <213> Human immunodeficiency virus type 1

<400> 176
 His Leu Leu Gln Leu Thr Val Trp Gly Ile Lys Gln Leu Gln Ala Arg
 1 5 10 15

<210> 177
 <211> 36
 <212> PRT
 <213> Human immunodeficiency virus type 1

<400> 177
 Tyr Thr His Ile Ile Tyr Ser Leu Ile Glu Gln Ser Gln Asn Gln Gln
 1 5 10 15
 Glu Lys Asn Glu Gln Glu Leu Leu Ala Leu Asp Lys Trp Ala Ser Leu
 20 25 30
 Trp Asn Trp Phe
 35

<210> 178
 <211> 26
 <212> PRT
 <213> Human immunodeficiency virus type 1

<400> 178
 Tyr Thr His Ile Ile Tyr Ser Leu Ile Glu Gln Ser Gln Asn Gln Gln
 1 5 10 15
 Glu Lys Asn Glu Gln Glu Leu Leu Glu Leu
 20 25

<210> 179
 <211> 19
 <212> PRT
 <213> Homo sapiens

<400> 179

Gly Arg Glu Arg Arg Pro Arg Leu Ser Asp Arg Pro Gln Leu Pro Tyr
1 5 10 15

Leu Glu Ala

<210> 180

<211> 20

<212> PRT

<213> Homo sapiens

<400> 180

Arg Glu Gln Arg Arg Phe Ser Val Ser Thr Leu Arg Asn Leu Gly Leu
1 5 10 15

Gly Lys Lys Ser
20

<210> 181

<211> 18

<212> PRT

<213> Plasmodium yoelii

<400> 181

Pro Asn Lys Leu Pro Arg Ser Thr Ala Val Val His Gln Leu Lys Arg
1 5 10 15

Lys His

<210> 182

<211> 11

<212> PRT

<213> Plasmodium yoelii

<400> 182

Thr Ala Val Val His Gln Leu Lys Arg Lys His
1 5 10

<210> 183

<211> 22

<212> PRT

<213> Plasmodium vivax

<400> 183

Pro Ala Gly Asp Arg Ala Asp Gly Gln Pro Ala Gly Asp Arg Ala Ala
1 5 10 15

Ala Gly Gln Pro Ala Gly
20

<210> 184
 <211> 12
 <212> PRT
 <213> Avian leukosis virus

<400> 184
 Asn Gln Ser Trp Thr Met Val Ser Pro Ile Asn Val
 1 5 10

<210> 185
 <211> 16
 <212> PRT
 <213> Avian leukosis virus

<400> 185
 Met Ile Lys Asn Gly Thr Lys Arg Thr Ala Val Thr Phe Gly Ser Val
 1 5 10 15

<210> 186
 <211> 19
 <212> PRT
 <213> Foot-and-mouth disease virus

<400> 186
 Pro Asn Leu Arg Gly Asp Leu Gln Val Leu Ala Gln Lys Val Ala Arg
 1 5 10 15

Thr Leu Pro

<210> 187
 <211> 26
 <212> PRT
 <213> Foot-and-mouth disease virus

<400> 187
 Arg Tyr Asn Arg Asn Ala Val Pro Asn Leu Arg Gly Asp Leu Gln Val
 1 5 10 15

Leu Ala Gln Lys Val Ala Arg Thr Leu Pro
 20 25

<210> 188
 <211> 16
 <212> PRT
 <213> Hepatitis C virus

<400> 188
 Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
 1 5 10 15

Leu

<210> 189
 <211> 34
 <212> PRT
 <213> Hepatitis B virus

<400> 189
 Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro Arg Arg
 1 5 10 15
 Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg Glu Ser
 20 25 30

Gln Cys

<210> 190
 <211> 16
 <212> PRT
 <213> Hepatitis B virus

<400> 190
 Gly Ile Val Asn Leu Glu Asp Pro Ala Ser Arg Asp Leu Val Val Ser
 1 5 10 15

<210> 191
 <211> 17
 <212> PRT
 <213> Hepatitis B virus

<400> 191
 Gly Ile Val Asn Leu Glu Asp Pro Ala Ser Arg Asp Leu Val Val Ser
 1 5 10 15

Cys

<210> 192
 <211> 20
 <212> PRT
 <213> Plasmodium falciparum

<400> 192
 Glu Tyr Leu Asn Lys Ile Gln Asn Ser Leu Ser Thr Glu Trp Ser Pro
 1 5 10 15

Cys Ser Val Thr
 20

<210> 193
 <211> 9
 <212> PRT
 <213> Plasmodium vivax

<400> 193
 Asp Arg Ala Xaa Gly Gln Pro Ala Gly
 1 5

<210> 194
 <211> 9
 <212> PRT
 <213> Plasmodium vivax

<400> 194
 Ala Asn Gly Ala Xaa Asx Gln Pro Gly
 1 5

<210> 195
 <211> 11
 <212> PRT
 <213> Plasmodium vivax

<400> 195
 Ala Pro Gly Ala Asn Gln Glu Gly Gly Ala Ala
 1 5 10

<210> 196
 <211> 19
 <212> PRT
 <213> Plasmodium vivax

<400> 196
 Tyr Leu Asp Lys Val Arg Ala Thr Val Gly Thr Glu Trp Thr Pro Cys
 1 5 10 15

Ser Val Thr

<210> 197
 <211> 21
 <212> PRT
 <213> Plasmodium vivax

<400> 197
 Pro Ala Gly Asp Arg Ala Asp Gly Gln Pro Ala Gly Asp Arg Ala Ala
 1 5 10 15

Gly Gln Pro Ala Gly
 20

<210> 198
 <211> 18
 <212> PRT
 <213> Plasmodium vivax

<400> 198
 Asp Arg Ala Ala Gly Gln Pro Ala Gly Asp Arg Ala Asp Gly Gln Pro
 1 5 10 15

Ala Gly

<210> 199
 <211> 36
 <212> PRT
 <213> Plasmodium vivax

<400> 199
 Ala Asn Gly Ala Gly Asn Gln Pro Gly Ala Asn Gly Ala Gly Asp Gln
 1 5 10 15
 Pro Gly Ala Asn Gly Ala Asp Asn Gln Pro Gly Ala Asn Gly Ala Asp
 20 25 30
 Asp Gln Pro Gly
 35

<210> 200
 <211> 18
 <212> PRT
 <213> Plasmodium vivax

<400> 200
 Ala Asn Gly Ala Gly Asn Gln Pro Gly Ala Asn Gly Ala Gly Asp Gln
 1 5 10 15
 Pro Gly

<210> 201
 <211> 19
 <212> PRT
 <213> Plasmodium vivax

<400> 201
 Gln Ala Asn Gly Ala Asp Asn Gln Pro Gly Ala Asn Gly Ala Asp Asp
 1 5 10 15
 Gln Pro Gly

<210> 202
 <211> 22
 <212> PRT
 <213> Plasmodium vivax

<400> 202
 Ala Pro Gly Ala Asn Gln Glu Gly Gly Ala Ala Ala Pro Gly Ala Asn
 1 5 10 15
 Gln Glu Gly Gly Ala Ala
 20

<210> 203
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Hepatitis B
 virus PCR primer with an NcoI restriction site

 <400> 203
 ttgggccatg gacatcgacc ctta 24

 <210> 204
 <211> 34
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Hepatitis B
 virus PCR primer with an EcoRI restriction site.

 <400> 204
 gcggagctct ttttccaaat taattaacac ccac 34

 <210> 205
 <211> 30
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Hepatitis B
 virus PCR primer with EcoRI and SacI restriction
 sites and an inserted lysine codon

 <400> 205
 cgcgagctcg atccagcgtc tagagagacc 30

 <210> 206
 <211> 31
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Hepatitis B
 virus PCR primer with HindIII restriction site

 <400> 206
 cgcaagctta aacaacagta gtctccggaa g 31

 <210> 207
 <211> 14
 <212> PRT
 <213> Hepatitis B virus

 <400> 207
 Cys Gln Glu Lys Gln Leu Asp Glu Asn Ala Asn Val Gln Leu
 1 5 10

<210> 208
<211> 13
<212> PRT
<213> Hepatitis B virus

<400> 208
Cys Ser Lys Lys Gly Pro Arg Ala Ser Gly Asn Leu Ile
1 5 10

<210> 209
<211> 21
<212> PRT
<213> Hepatitis B virus

<400> 209
Cys Leu Leu Thr Glu His Arg Met Thr Trp Asp Pro Ala Gln Pro Pro
1 5 10 15

Arg Asp Leu Thr Glu
20

<210> 210
<211> 22
<212> PRT
<213> Hepatitis B virus

<400> 210
Cys Val Lys Arg Met Lys Glu Ser Arg Leu Glu Asp Thr Gln Lys His
1 5 10 15

Arg Val Asp Phe Leu Gln
20

<210> 211
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Cytochrome
P-450 fragment

<400> 211
Cys Met Gln Leu Arg Ser
1 5

<210> 212
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Cytochrome
P-450 fragment

<400> 212
Cys Arg Phe Ser Ile Asn
1 5

<210> 213
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Cytochrome
P-450 fragment

<400> 213
Cys Ala Val Pro Arg
1 5

<210> 214
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Cytochrome
P-450 fragment

<400> 214
Cys Val Ile Pro Arg Ser
1 5

<210> 215
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Cytochrome
P-450 fragment

<400> 215
Cys Phe Ile Pro Val
1 5

<210> 216
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Cytochrome
P-450 fragment

<400> 216
Cys Thr Val Ser Gly Ala
1 5

<210> 217
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Cytochrome
P-450 fragment

<400> 217
Cys Thr Leu Ser Gly Glu
1 5

<210> 218
<211> 20
<212> PRT
<213> Hepatitis B virus

<400> 218
Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp Leu Val
1 5 10 15
Val Ser Tyr Val
20

<210> 219
<211> 63
<212> DNA
<213> Hepatitis B virus

<400> 219
gctacctggg tgggtgttaa ttggaagat ccagcgtcta gagacctagt agtcagttat 60
gtc 63

<210> 220
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: K inserted at
amino acid position 75 of Hepatitis B core

<400> 220
Thr Trp Val Gly Val Lys Asn Leu Glu Asp Pro Ala Ser Arg Asp Leu
1 5 10 15
Val Val Ser Tyr Val
20

<210> 221
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Lysine codon
 aaa inserted to make HBc- K75 mutant

<400> 221
 gctacctggg tgggtgtaa aaatttggaa gatccagcg c 41

<210> 222
 <211> 21
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: K inserted at
 amino acid position 76 of Hepatitis B core

<400> 222
 Thr Trp Val Gly Val Asn Lys Leu Glu Asp Pro Ala Ser Arg Asp Leu
 1 5 10 15
 Val Val Ser Tyr Val
 20

<210> 223
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Lysine codon
 aaa inserted to make HBc-K76 mutant

<400> 223
 ttaataaaatt ggaagatcca gcgtcta 27

<210> 224
 <211> 21
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: K inserted at
 position 77 of Hepatitis B virus core

<400> 224
 Thr Trp Val Gly Val Asn Leu Lys Glu Asp Pro Ala Ser Arg Asp Leu
 1 5 10 15
 Val Val Ser Tyr Val
 20

<210> 225
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Lysine codon
aaa inserted to make HBc-K77 mutant

<400> 225

ttaatttgaa agaagatcca gcgtcta

27

<210> 226

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: K inserted at
amino acid position 78 of Hepatitis B core

<400> 226

Thr Trp Val Gly Val Asn Leu Glu Lys Asp Pro Ala Ser Arg Asp Leu
1 5 10 15

Val Val Ser Tyr Val
20

<210> 227

<211> 32

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Lysine codon
aaa inserted to make HBc-K78 mutant

<400> 227

ttaatttgga aaaagatcca gcgtctagag ac

32

<210> 228

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: K inserted at
amino acid position 79 fo Hepatitis B core.

<400> 228

Thr Trp Val Gly Val Asn Leu Glu Asp Lys Pro Ala Ser Arg Asp Leu
1 5 10 15

Val Val Ser Tyr Val
20

<210> 229

<211> 36

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Lysine codon
aaa inserted to make HBc-K79 mutant

<400> 229

ttaatttgga agataaacca gcgtctagag acctag

36

<210> 230

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: K inserted at
amino acid position 79 of Hepatitis B core

<400> 230

Thr Trp Val Gly Val Asn Leu Glu Asp Pro Lys Ala Ser Arg Asp Leu
1 5 10 15

Val Val Ser Tyr Val
20

<210> 231

<211> 39

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Lysine codon
aaa inserted to make HBc-K80 mutant

<400> 231

ttaatttgga agatccaaaa gcgtctagag acctagtag

39

<210> 232

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: K inserted at
amino acid position 81 of Hepatitis B core

<400> 232

Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Lys Ser Arg Asp Leu
1 5 10 15

Val Val Ser Tyr Val
20

<210> 233

<211> 43

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Lysine codon
aaa inserted to make HBc-K81 mutant

<400> 233

ttaatttgga agatccagcg aaatctagag acctagtagt cag

43

<210> 234

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: K inserted at
amino acid position 82 of Hepatitis B core

<400> 234

Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Lys Arg Asp Leu
1 5 10 15

Val Val Ser Tyr Val
20

<210> 235

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Lysine codon
aaa inserted to make HBc-K82 mutant

<400> 235

ttaatttgga agatccagcg tctaaaagag acctagtagt cagtt

45

<210> 236

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: K inserted at
amino acid position 83 to Hepatitis B core

<400> 236

Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Lys Asp Leu
1 5 10 15

Val Val Ser Tyr Val
20

<210> 237

<211> 50

<212> DNA

<213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Lysine codon
 aaa inserted to make HBc-K83 mutant

 <400> 237
 ttaatttgga agatccagcg tctagaaaag acctagtagt cagttatgtc 50

 <210> 238
 <211> 21
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: K inserted at
 amino acid position 83 of Hepatitis B core

 <400> 238
 Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp Lys Leu
 1 5 10 15
 Val Val Ser Tyr Val
 20

 <210> 239
 <211> 50
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Lysine codon
 aaa inserted to make HBc-K84 mutant

 <400> 239
 ttaatttgga agatccagcg tctagagaca aactagtagt cagttatgtc 50

 <210> 240
 <211> 21
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: K inserted at
 amino acid position 85 of Hepatitis B core

 <400> 240
 Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp Leu Lys
 1 5 10 15
 Val Val Ser Tyr Val
 20

 <210> 241
 <211> 31
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Lysine codon
aaa inserted to make HBc-K85 mutant

<400> 241

ctcgagagac ctaaaagtag tcagttatgt c

31

<210> 242

<211> 36

<212> PRT

<213> Hepatitis B virus

<400> 242

Gly Ile Gln Trp Met Glu Trp Asp Arg Glu Ile Asn Asn Tyr Thr Ser
1 5 10 15

Leu Ile His Ser Leu Ile Glu Glu Ser Gln Asn Gln Gln Glu Lys Asn
20 25 30

Glu Gln Glu Leu
35

<210> 243

<211> 102

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: human
cytochrome P450

<400> 243

aatttggatg tgggaagatc gtgagatcaa caattatacc agcctgatac attctttaat 60
tgaagagtcc cagaaccaac aggagaaaaa tgaacaagag ct 102

<210> 244

<211> 94

<212> DNA

<213> Hepatitis B virus

<400> 244

cttgttcatt tttctcctgt tggttctggg actcttcaat taaagaatgt atcaggctgg 60
tataattggt gatctcacga tcttcccaca tcca 94

<210> 245

<211> 6

<212> PRT

<213> Hepatitis B virus

<400> 245

Met Asp Ile Asp Pro Tyr
1 5

<210> 246
 <211> 217
 <212> PRT
 <213> *Spermophilus variegatus*

<400> 246
 Met Tyr Leu Phe His Leu Cys Leu Val Phe Ala Cys Val Pro Cys Pro
 1 5 10 15
 Thr Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Asp Met Asp
 20 25 30
 Ile Asp Pro Tyr Lys Glu Phe Gly Ser Ser Tyr Gln Leu Leu Asn Phe
 35 40 45
 Leu Pro Leu Asp Phe Phe Pro Asp Leu Asn Ala Leu Val Asp Thr Ala
 50 55 60
 Ala Ala Leu Tyr Glu Glu Glu Leu Thr Gly Arg Glu His Cys Ser Pro
 65 70 75 80
 His His Thr Ala Ile Arg Gln Ala Leu Val Cys Trp Glu Glu Leu Thr
 85 90 95
 Arg Leu Ile Thr Trp Met Ser Glu Asn Thr Thr Glu Glu Val Arg Arg
 100 105 110
 Ile Ile Val Asp His Val Asn Asn Thr Trp Gly Leu Lys Val Arg Gln
 115 120 125
 Thr Leu Trp Phe His Leu Ser Cys Leu Thr Phe Gly Gln His Thr Val
 130 135 140
 Gln Glu Phe Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Ala Pro
 145 150 155 160
 Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu His Thr
 165 170 175
 Val Ile Arg Arg Arg Gly Gly Ser Arg Ala Ala Arg Ser Pro Arg Arg
 180 185 190
 Arg Thr Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg
 195 200 205
 Arg Ser Gln Ser Pro Ala Ser Asn Cys
 210 215

<210> 247
 <211> 183
 <212> PRT
 <213> *Hepatitis B virus*

<400> 247
 Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
 1 5 10 15
 Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
 20 25 30

[illegible][illegible][illegible][illegible]

Val Arg Gln Ser Leu Trp Phe His Leu Ser Cys Leu Thr Phe Gly Gln
100 105 110

His Thr Val Gln Glu Phe Leu Val Ser Phe Gly Val Trp Ile Arg Thr
115 120 125

Pro Ala Pro Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
130 135 140

Glu His Thr Val Ile Arg Arg Arg Gly Gly Ala Arg Ala Ser Arg Ser
145 150 155 160

Pro Arg Arg Arg Thr Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro
165 170 175

Arg Arg Arg Arg Ser Gln Cys
180

<210> 252
<211> 26
<212> PRT
<213> Bos taurus

<400> 252
Ser Thr Pro Pro Leu Pro Trp Pro Trp Ser Pro Ala Ala Leu Arg Leu
1 5 10 15

Leu Gln Arg Pro Pro Glu Glu Pro Ala Ala
20 25

<210> 253
<211> 17
<212> PRT
<213> Ebola virus

<400> 253
Ala Thr Gln Val Glu Gln His His Arg Arg Thr Asp Asn Asp Ser Thr
1 5 10 15

Ala

<210> 254
<211> 17
<212> PRT
<213> Ebola virus

<400> 254
His Asn Thr Pro Val Tyr Lys Leu Asp Ile Ser Glu Ala Thr Gln Val
1 5 10 15

Glu

<210> 255
 <211> 17
 <212> PRT
 <213> Ebola virus

<400> 255
 Gly Lys Leu Gly Leu Ile Thr Asn Thr Ile Ala Gly Val Ala Val Leu
 1 5 10 15

Ile

<210> 256
 <211> 10
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:flexible linker
 arm

<400> 256
 Gly Gly Gly Gly Ser Gly Gly Gly Gly Thr
 1 5 10

<210> 257
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: flexible
 linker arm

<400> 257
 Gly Gly Gly Gly Ser Gly Gly Gly Gly
 1 5

<210> 258
 <211> 513
 <212> DNA
 <213> Plasmodium falciparum

<220>
 <221> CDS
 <222> (1)..(513)

<400> 258
 atg gac atc gac cct tat aaa gaa ttt gga gct act gtg gag tta ctc 48
 Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
 1 5 10 15

tcg ttt ttg cct tct gac ttc ttt cct tca gta cga gat ctt cta gat 96
 Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
 20 25 30

Trp Ile Arg Thr Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu
 145 150 155 160
 Ser Thr Leu Pro Glu Thr Thr Val Val
 165

<210> 260
 <211> 513
 <212> DNA
 <213> Plasmodium falciparum

<220>
 <221> CDS
 <222> (1) .. (513)

<400> 260
 atg gac atc gac cct tat aaa gaa ttt gga gct act gtg gag tta ctc 48
 Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
 1 5 10 15
 tcg ttt ttg cct tct gac ttc ttt cct tca gta cga gat ctt cta gat 96
 Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
 20 25 30
 acc gcc tca gct ctg tat cgg gaa gcc tta gag tct cct gag cat tgt 144
 Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
 35 40 45
 tca cct cac cat act gca ctc agg caa gca att ctt tgc tgg ggg gaa 192
 Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
 50 55 60
 cta atg act cta gct acc tgg gtg ggt gtt aat ttg gaa gga att aac 240
 Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Gly Ile Asn
 65 70 75 80
 gct aat ccg aac gct aat ccg aac gct aat ccg aac gct aat ccg gag 288
 Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Glu
 85 90 95
 ctc gat cca gcg tct aga gac cta gta gtc agt tat gtc aac act aat 336
 Leu Asp Pro Ala Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn
 100 105 110
 atg ggc cta aag ttc agg caa ctc ttg tgg ttt cac att tct tgt ctc 384
 Met Gly Leu Lys Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu
 115 120 125
 act ttt gga aga gaa aca gtt ata gag tat ttg gtg tct ttc gga gtg 432
 Thr Phe Gly Arg Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val
 130 135 140
 tgg att cgc act cct cca gct tat aga cca cca aat gcc cct atc cta 480
 Trp Ile Arg Thr Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu
 145 150 155 160
 tca aca ctt ccg gag act act gtt gtt tag taa 513
 Ser Thr Leu Pro Glu Thr Thr Val Val
 165 170

<210> 261
 <211> 169
 <212> PRT
 <213> Plasmodium falciparum

<400> 261
 Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
 1 5 10 15
 Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
 20 25 30
 Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
 35 40 45
 Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
 50 55 60
 Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Gly Ile Asn
 65 70 75 80
 Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Glu
 85 90 95
 Leu Asp Pro Ala Ser Arg Asp Leu Val Ser Tyr Val Asn Thr Asn
 100 105 110
 Met Gly Leu Lys Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu
 115 120 125
 Thr Phe Gly Arg Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val
 130 135 140
 Trp Ile Arg Thr Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu
 145 150 155 160
 Ser Thr Leu Pro Glu Thr Thr Val Val
 165

<210> 262
 <211> 519
 <212> DNA
 <213> Plasmodium falciparum

<220>
 <221> CDS
 <222> (1)..(519)

<400> 262
 atg gac atc gac cct tat aaa gaa ttt gga gct act gtg gag tta ctc 48
 Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
 1 5 10 15
 tcg ttt ttg cct tct gac ttc ttt cct tca gta cga gat ctt cta gat 96
 Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
 20 25 30
 acc gcc tca gct ctg tat cgg gaa gcc tta gag tct cct gag cat tgt 144
 Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
 35 40 45
 tca cct cac cat act gca ctc agg caa gca att ctt tgc tgg ggg gaa 192
 Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
 50 55 60
 cta atg act cta gct acc tgg gtg ggt gtt aat ttg gaa gat cca gcg 240
 Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala
 65 70 75 80

<220>
 <221> CDS
 <222> (1)..(516)

<400> 264

atg gac atc gac cct tat aaa gaa ttt gga gct act gtg gag tta ctc	48
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu	
1 5 10 15	
tcg ttt ttg cct tct gac ttc ttt cct tca gta cga gat ctt cta gat	96
Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp	
20 25 30	
acc gcc tca gct ctg tat cgg gaa gcc tta gag tct cct gag cat tgt	144
Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys	
35 40 45	
tca cct cac cat act gca ctc agg caa gca att ctt tgc tgg ggg gaa	192
Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu	
50 55 60	
cta atg act cta gct acc tgg gtg ggt gtt aat ttg gaa gat gga att	240
Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Gly Ile	
65 70 75 80	
aac gct aat ccg aac gct aat ccg aac gct aat ccg aac gct aat ccg	288
Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro	
85 90 95	
gag ctc cca gcg tct aga gac cta gta gtc agt tat gtc aac act aat	336
Glu Leu Pro Ala Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn	
100 105 110	
atg ggc cta aag ttc agg caa ctc ttg tgg ttt cac att tct tgt ctc	384
Met Gly Leu Lys Phe Arg Gln Leu Trp Phe His Ile Ser Cys Leu	
115 120 125	
act ttt gga aga gaa aca gtt ata gag tat ttg gtg tct ttc gga gtg	432
Thr Phe Gly Arg Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val	
130 135 140	
tgg att cgc act cct cca gct tat aga cca cca aat gcc cct atc cta	480
Trp Ile Arg Thr Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu	
145 150 155 160	
tca aca ctt ccg gag act act gtt gtt tgc tag taa	516
Ser Thr Leu Pro Glu Thr Thr Val Val Cys	
165 170	

<210> 265
 <211> 170
 <212> PRT
 <213> Plasmodium falciparum

<400> 265

Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu	
1 5 10 15	
Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp	
20 25 30	

atg ggc cta aag ttc agg caa ctc ttg tgg ttt cac att tct tgt ctc	384
Met Gly Leu Lys Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu	
115 120 125	
act ttt gga aga gaa aca gtt ata gag tat ttg gtg tct ttc gga gtg	432
Thr Phe Gly Arg Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val	
130 135 140	
tgg att cgc act cct cca gct tat aga cca cca aat gcc cct atc cta	480
Trp Ile Arg Thr Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu	
145 150 155 160	
tca aca ctt ccg gag act act gtt gtt gga att gaa tat ctg aac aaa	528
Ser Thr Leu Pro Glu Thr Thr Val Val Gly Ile Glu Tyr Leu Asn Lys	
165 170 175	
atc cag aac tct ctg tcc acc gaa tgg tct ccg tgc tcc gtt acc tag	576
Ile Gln Asn Ser Leu Ser Thr Glu Trp Ser Pro Cys Ser Val Thr	
180 185 190	
taa	579

<210> 267
 <211> 191
 <212> PRT
 <213> Plasmodium falciparum

<400> 267

Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu	
1 5 10 15	
Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp	
20 25 30	
Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys	
35 40 45	
Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu	
50 55 60	
Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Gly Ile	
65 70 75 80	
Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro	
85 90 95	
Glu Leu Pro Ala Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn	
100 105 110	
Met Gly Leu Lys Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu	
115 120 125	
Thr Phe Gly Arg Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val	
130 135 140	
Trp Ile Arg Thr Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu	
145 150 155 160	
Ser Thr Leu Pro Glu Thr Thr Val Val Gly Ile Glu Tyr Leu Asn Lys	
165 170 175	
Ile Gln Asn Ser Leu Ser Thr Glu Trp Ser Pro Cys Ser Val Thr	
180 185 190	

<210> 268
 <211> 591
 <212> DNA
 <213> Plasmodium falciparum

<220>
 <221> CDS
 <222> (1) .. (591)

<400> 268

atg gac atc gac cct tat aaa gaa ttt gga gct act gtg gag tta ctc	48
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu	
1 5 10 15	
tcg ttt ttg cct tct gac ttc ttt cct tca gta cga gat ctt cta gat	96
Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp	
20 25 30	
acc gcc tca gct ctg tat cgg gaa gcc tta gag tct cct gag cat tgt	144
Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys	
35 40 45	
tca cct cac cat act gca ctc agg caa gca att ctt tgc tgg ggg gaa	192
Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu	
50 55 60	
cta atg act cta gct acc tgg gtg ggt gtt aat ttg gaa gat gga att	240
Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Gly Ile	
65 70 75 80	
aac gcg aat ccg aac gtg gat ccg aat gcc aac cct aac gcc aac cca	288
Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro	
85 90 95	
aat gcg aac cca gag ctc cca gcg tct aga gac cta gta gtc agt tat	336
Asn Ala Asn Pro Glu Leu Pro Ala Ser Arg Asp Leu Val Val Ser Tyr	
100 105 110	
gtc aac act aat atg ggc cta aag ttc agg caa ctc ttg tgg ttt cac	384
Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln Leu Leu Trp Phe His	
115 120 125	
att tct tgt ctc act ttt gga aga gaa aca gtt ata gag tat ttg gtg	432
Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val Ile Glu Tyr Leu Val	
130 135 140	
tct ttc gga gtg tgg att cgc act cct cca gct tat aga cca cca aat	480
Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala Tyr Arg Pro Pro Asn	
145 150 155 160	
gcc cct atc cta tca aca ctt ccg gag act act gtt gtt gga att gaa	528
Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr Val Val Gly Ile Glu	
165 170 175	
tat ctg aac aaa atc cag aac tct ctg tcc acc gaa tgg tct ccg tgc	576
Tyr Leu Asn Lys Ile Gln Asn Ser Leu Ser Thr Glu Trp Ser Pro Cys	
180 185 190	
tcc gtt acc tag taa	591
Ser Val Thr	
195	

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<210> 269
 <211> 195
 <212> PRT
 <213> Plasmodium falciparum

<400> 269
 Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
 1 5 10 15
 Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
 20 25 30
 Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
 35 40 45
 Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
 50 55 60
 Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Gly Ile
 65 70 75 80
 Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro
 85 90 95
 Asn Ala Asn Pro Glu Leu Pro Ala Ser Arg Asp Leu Val Val Ser Tyr
 100 105 110
 Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln Leu Leu Trp Phe His
 115 120 125
 Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val Ile Glu Tyr Leu Val
 130 135 140
 Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala Tyr Arg Pro Pro Asn
 145 150 155 160
 Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr Val Val Gly Ile Glu
 165 170 175
 Tyr Leu Asn Lys Ile Gln Asn Ser Leu Ser Thr Glu Trp Ser Pro Cys
 180 185 190
 Ser Val Thr
 195

<210> 270
 <211> 561
 <212> DNA
 <213> Human immunodeficiency virus type 1

<220>
 <221> CDS
 <222> (1)..(561)

<400> 270
 atg gac atc gac cct tat aaa gaa ttt gga gct act gtg gag tta ctc 48
 Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
 1 5 10 15
 tcg ttt ttg cct tct gac ttc ttt cct tca gta cga gat ctt cta gat 96
 Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
 20 25 30
 acc gcc tca gct ctg tat cgg gaa gcc tta gag tct cct gag cat tgt 144
 Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
 35 40 45
 tca cct cac cat act gca ctc agg caa gca att ctt tgc tgg ggg gaa 192
 Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
 50 55 60

cta Leu 65	atg Met	act Thr	cta Leu	gct Ala	acc Thr 70	tgg Trp	gtg Val	ggt Gly	gtt Val	aat Asn 75	ttg Leu	gaa Glu	gat Asp	gga Gly	att Ile 80	240
caa Gln	tgg Trp	atg Met	gaa Glu 85	tgg Trp 85	gat Asp	cgt Arg	gag Glu	atc Ile	aac Asn 90	aat Asn	tat Tyr	acc Thr	agc Ser	ctg Leu 95	ata Ile	288
cat His	tct Ser	tta Leu	att Ile 100	gaa Glu	gag Glu	tcc Ser	cag Gln	aac Asn 105	caa Gln	cag Gln	gag Glu	aaa Lys	aat Asn 110	gaa Glu	caa Gln	336
gag Glu	ctc Leu	cça Pro 115	gcg Ala	tct Ser	aga Arg	gac Asp	cta Leu 120	gta Val	gtc Val	agt Ser	tat Tyr	gtc Val 125	aac Asn	act Thr	aat Asn	384
atg Met 130	ggc Gly	cta Leu	aag Lys	ttc Phe	agg Arg	caa Gln 135	ctc Leu	ttg Leu	tgg Trp	ttt Phe 140	cac His	att Ile	tct Ser	tgt Cys	ctc Leu	432
act Thr 145	ttt Phe	gga Gly	aga Arg	gaa Glu	aca Thr 150	gtt Val	ata Ile	gag Glu	tat Tyr	ttg Leu 155	gtg Val	tct Ser	ttc Phe	gga Gly	gtg Val 160	480
tgg Trp	att Ile	cgc Arg	act Thr 165	cct Pro	cca Pro	gct Ala	tat Tyr	aga Arg	cca Pro 170	cca Pro	aat Asn	gcc Ala	cct Pro	atc Ile 175	cta Leu	528
tca Ser	aca Thr	ctt Leu	ccg Pro 180	gag Glu	act Thr	act Thr	gtt Val	gtt Val 185	tag	taa						561

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<210> 271
<211> 185
<212> PRT
<213> Human immunodeficiency virus type 1
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<400>	271															
Met	Asp	Ile	Asp	Pro	Tyr	Lys	Glu	Phe	Gly	Ala	Thr	Val	Glu	Leu	Leu	
1				5					10					15		
Ser	Phe	Leu	Pro	Ser	Asp	Phe	Phe	Pro	Ser	Val	Arg	Asp	Leu	Leu	Asp	
			20					25					30			
Thr	Ala	Ser	Ala	Leu	Tyr	Arg	Glu	Ala	Leu	Glu	Ser	Pro	Glu	His	Cys	
		35					40					45				
Ser	Pro	His	His	Thr	Ala	Leu	Arg	Gln	Ala	Ile	Leu	Cys	Trp	Gly	Glu	
	50					55					60					
Leu	Met	Thr	Leu	Ala	Thr	Trp	Val	Gly	Val	Asn	Leu	Glu	Asp	Gly	Ile	
65					70				75					80		
Gln	Trp	Met	Glu	Trp	Asp	Arg	Glu	Ile	Asn	Asn	Tyr	Thr	Ser	Leu	Ile	
				85					90					95		
His	Ser	Leu	Ile	Glu	Glu	Ser	Gln	Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	
			100					105					110			
Glu	Leu	Pro	Ala	Ser	Arg	Asp	Leu	Val	Val	Ser	Tyr	Val	Asn	Thr	Asn	
		115					120					125				
Met	Gly	Leu	Lys	Phe	Arg	Gln	Leu	Leu	Trp	Phe	His	Ile	Ser	Cys	Leu	
	130					135					140					
Thr	Phe	Gly	Arg	Glu	Thr	Val	Ile	Glu	Tyr	Leu	Val	Ser	Phe	Gly	Val	
145					150					155					160	
Trp	Ile	Arg	Thr	Pro	Pro	Ala	Tyr	Arg	Pro	Pro	Asn	Ala	Pro	Ile	Leu	
				165					170					175		

Ser Thr Leu Pro Glu Thr Thr Val Val
180 185

<210> 272
<211> 564
<212> DNA
<213> Human immunodeficiency virus type 1

<220>
<221> CDS
<222> (1)..(564)

<400> 272
atg gac atc gac cct tat aaa gaa ttt gga gct act gtg gag tta ctc 48
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
1 5 10 15
tcg ttt ttg cct tct gac ttc ttt cct tca gta cga gat ctt cta gat 96
Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
20 25 30
acc gcc tca gct ctg tat cgg gaa gcc tta gag tct cct gag cat tgt 144
Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
35 40 45
tca cct cac cat act gca ctc agg caa gca att ctt tgc tgg ggg gaa 192
Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
50 55 60
cta atg act cta gct acc tgg gtg ggt gtt aat ttg gaa gat gga att 240
Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Gly Ile
65 70 75 80
caa tgg atg gaa tgg gat cgt gag atc aac aat tat acc agc ctg ata 288
Gln Trp Met Glu Trp Asp Arg Glu Ile Asn Asn Tyr Thr Ser Leu Ile
85 90 95
cat tct tta att gaa gag tcc cag aac caa cag gag aaa aat gaa caa 336
His Ser Leu Ile Glu Glu Ser Gln Asn Gln Gln Glu Lys Asn Glu Gln
100 105 110
gag ctc cca gcg tct aga gac cta gta gtc agt tat gtc aac act aat 384
Glu Leu Pro Ala Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn
115 120 125
atg ggc cta aag ttc agg caa ctc ttg tgg ttt cac att tct tgt ctc 432
Met Gly Leu Lys Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu
130 135 140
act ttt gga aga gaa aca gtt ata gag tat ttg gtg tct ttc gga gtg 480
Thr Phe Gly Arg Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val
145 150 155 160
tgg att cgc act cct cca gct tat aga cca cca aat gcc cct atc cta 528
Trp Ile Arg Thr Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu
165 170 175

<400>	275					
atggacatcg	acccttataa	agaatttgga	gctactgtgg	agttactctc	gtttttgcct	60
tctgacttct	ttccttcagt	acgagatctt	ctagataccg	cctcagctct	gtatcgggaa	120
gccttagagt	ctcctgagca	ttgttcacct	caccatactg	cactcaggca	agcaattctt	180
tgctgggggg	aactaatgac	tctagctacc	tggggtgggtg	ttaatttgga	agatccagcg	240
tctagagacc	tagtagtcag	ttatgtcaac	actaatatgg	gcctaaagtt	caggcaactc	300
ttgtggtttc	acattttcttg	tctcactttt	ggaagagaaa	cagttataga	gtatttggtg	360
tctttcggag	tgtggattcg	cactcctcca	gcttatagac	caccaaatgc	ccctatccta	420
tcaacacttc	cggagactac	tgttgttaga	cgacgaggca	ggtccccctag	aagaagaact	480
ccctcgcctc	gcagacgaag	gtctcaatcg	ccgcgtcgca	gaagatctca	atctcgggaa	540
tctcaatgt						549

```
<210> 276
<211> 554
<212> DNA
<213> Hepatitis B virus
```

<400> 276							
atggacattg	acccttataa	agaatttgga	gctactgtgg	agttactctc	gtttttgcct		60
tctgacttct	ttccttcctg	acgagatctc	ctagacaccg	cctcagctct	gtatcgagaa		120
gccttagagt	ctcctgagca	ttgctcacct	caccatactg	cactcaggca	agccattctc		180
tgctgggggg	aattgatgac	tctagctacc	tgggtgggta	ataatttgca	agatccagca		240
tccagagatc	tagtagtcaa	ttatgttaat	actaacatgg	gtttaaagat	caggcaacta		300
ttgtggtttc	atatatcttg	ccttactttt	ggaagagaga	ctgtacttga	atatttggtc		360
tctttcggag	tgtggattcg	cactcctcca	gcctatagac	caccaaattg	ccctatctta		420
tcaaaccttc	cggaaactac	tgttgttaga	cgacgggacc	gaggcagggt	ccctagaaga		480
agaactccct	cgcctcgcag	acgcagatct	caatcgccgc	gtcgcagaag	atctcaatct		540
cgggaatctc	aatqct						555

```
<210> 277
<211> 555
<212> DNA
<213> Hepatitis B virus
```

<400>	277						
atggacattg	acccttataa	agaatttgga	gctactgtgg	agttactctc	gtttttgcct	60	
tctgacttct	ttccttccgt	cagagatctc	ctagacaccg	cctcagctct	gtatcgagaa	120	
gccttagagt	ctcctgagca	ttgctcacct	caccatactg	cactcaggca	agccattctc	180	
tgctgggggg	aattgatgac	tctagctacc	tgggtgggta	ataatttgga	agatccagca	240	
tctagggatc	ttgtagtaaa	ttatgttaat	actaacgtgg	gtttaaagat	caggcaacta	300	
ttgtggtttc	atatactctt	ccttactttt	ggaagagaga	ctgtacttga	atatttggtc	360	
tctttcggag	tgtggattcg	cactcctcca	gcctatagac	caccaaattg	ccctatctta	420	
tcaacacttc	cggaaactac	tgttgttaga	cgacgggacc	gaggcagggt	ccctagaaga	480	
agaactccct	cgcctcgcag	acgcagatct	ccatcgccgc	gtcgcagaag	atctcaatct	540	
cggaatctc	aatq					555	

```
<210> 278
<211> 549
<212> DNA
<213> Hepatitis B virus
```

<400> 278						
atggacattg	acccttataa	agaatttgga	gctactgtgg	agttactctc	gtttttgcct	60
tctgacttct	ttccttccgt	acgagatctt	ctagataccg	ccgcagctct	gtatcgggat	120
gccttagagt	ctccttagca	ttgttcacct	caccatactg	cactcaggga	agcaattctt	180
tgctggggag	acttaatgac	tctagctacc	tgggtgggta	ctaat'ttga	agatccagca	240
cttagggacc	tagtagtcag	ttatgtcaac	actaatgtgg	gcctaaagtt	caqacaatta	300

```

ttgtggtttc acatttcttg tctcactttt ggaagagaaa cggttctaga gtatttggtg 360
tcttttggag tgtggattcg cactcctcca gcttatagac caccaaagtc ccctatccta 420
tcaacgcttc cggagactac tggttgtaga cgacgaggca ggtcccctag aagaagaact 480
ccctcgcttc gcagacgaag atctcaatcg ccgcgtcgca gaagatctca atctcgggaa 540
tctcaatgt                                     549

```

```

<210> 279
<211> 549
<212> DNA
<213> Marmota monax

```

```

<400> 279
atggcctttg ggcattggaca tagatcctta taaagaattt ggttcattctt atcagttggt 60
gaattttctt ccttttgact tctttcctga tcttaatgct ttgggtggaca ctgctactgc 120
cttgtagtaa gaagaactaa caggtaggga acattgctct ccgcaccata cagctattag 180
acaagcttta gtatgctggg atgaattaac taaattgata gcttgatga gctctaact 240
aacttctgaa caagtaagaa caatcattgt aaatcatgct aatgatacct ggggacttaa 300
ggtgagacaa agtttatggt ttcatttgtc atgtctcact ttcggacaac atacagttca 360
agaattttta gtaagttttg gagtatggat caggactcca gctccatata gacctcctaa 420
tgcacccatt ctctcgactc ttccggaaca tacagtcatt aggagaagag gaggtgcaag 480
agcttctagg tccccagaa gacgcactcc ctctcctcgc aggagaagat ctcaatcacc 540
gcgtcgag                                     549

```

```

<210> 280
<211> 13
<212> PRT
<213> Artificial Sequence

```

```

<220>
<223> Description of Artificial Sequence: human
        cytochrome P450

```

```

<400> 280
Gln Glu Lys Gln Leu Asp Glu Asn Ala Asn Val Gln Leu
 1             5             10

```

```

<210> 281
<211> 7
<212> PRT
<213> Artificial Sequence

```

```

<220>
<223> Description of Artificial Sequence: modified
        portion of Hepatitis B core

```

```

<400> 281
Cys Val Val Thr Thr Glu Pro
 1             5

```

```

<210> 282
<211> 42
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Description of Artificial Sequence: modified
        portion of Hepatitis B core

```

<400> 282
gcaagcttac tattgaattc cgcaaacaac agtagtctcc gg 42

<210> 283
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: modified
portion of Hepatitis B core

<400> 283
Thr Thr Val Val Gly Ile Glu Tyr Leu Asn Lys Ile Gln Asn Ser Leu
1 5 10 15
Ser Thr Glu Trp Ser Pro Cys Ser Val Thr
20 25

<210> 284
<211> 27
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: modified
portion of Hepatitis B core

<400> 284
Thr Thr Val Val Cys Gly Ile Glu Tyr Leu Asn Lys Ile Gln Asn Ser
1 5 10 15
Leu Ser Thr Glu Trp Ser Pro Ala Ser Val Thr
20 25

<210> 285
<211> 51
<212> DNA
<213> plasmid pKK223

<400> 285
ttcacacagg aaacagaatt cccggggatc cgtcgacctg cagccaagct t 51

<210> 286
<211> 38
<212> DNA
<213> plasmid pKK223

<400> 286
ttcacataag gaggaaaaaa cattgggatc cgaagctt 38

<210> 287
<211> 20
<212> PRT
<213> Plasmodium yoelii

<400> 287
 Glu Phe Val Lys Gln Ile Ser Ser Gln Leu Thr Glu Glu Trp Ser Gln
 1 5 10 15

Cys Ser Val Thr
 20

<210> 288
 <211> 14
 <212> PRT
 <213> Escherichia coli

<400> 288
 Cys Cys Glu Leu Cys Cys Tyr Pro Ala Cys Ala Gly Cys Asn
 1 5 10

<210> 289
 <211> 18
 <212> PRT
 <213> Escherichia coli

<400> 289
 Asn Thr Phe Tyr Cys Cys Glu Leu Cys Cys Tyr Pro Ala Cys Ala Gly
 1 5 10 15

Cys Asn

<210> 290
 <211> 18
 <212> PRT
 <213> Escherichia coli

<400> 290
 Ser Ser Asn Tyr Cys Cys Glu Leu Cys Cys Tyr Pro Ala Cys Ala Gly
 1 5 10 15

Cys Asn

<210> 291
 <211> 10
 <212> PRT
 <213> Influenza virus

<400> 291
 Leu Ile Asp Ala Leu Leu Gly Asp Pro Cys
 1 5 10

<210> 292
 <211> 9
 <212> PRT
 <213> Influenza virus

<400> 292
Thr Leu Ile Asp Ala Leu Leu Gly Cys
1 5

<210> 293
<211> 42
<212> PRT
<213> Homo sapiens

<400> 293
Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
1 5 10 15
Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
20 25 30
Gly Leu Met Val Gly Gly Val Val Ile Ala
35 40

<210> 294
<211> 11
<212> PRT
<213> Homo sapiens

<400> 294
Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
1 5 10

<210> 295
<211> 33
<212> PRT
<213> Homo sapiens

<400> 295
Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
1 5 10 15
Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
20 25 30

Gly

<210> 296
<211> 60
<212> DNA
<213> Homo sapiens

<400> 296
aattgatgcg gaatttcgctc atgacagcgg ctatgaggtg caccatcaga aactggagct 60

<210> 297
<211> 52
<212> DNA
<213> Homo sapiens

<400> 297
ccagtttctg atggtgcacc tcatagccgc tgtcatgacg aaattccgca tc 52

<210> 298
<211> 42
<212> DNA
<213> Homo sapiens

<400> 298
aattgaagat gtcggttcta acaagggggc aattatcgag ct 42

<210> 299
<211> 34
<212> DNA
<213> Homo sapiens

<400> 299
cgataattgc ccccttgta gaaccgacat cttc 34

<210> 300
<211> 82
<212> DNA
<213> Homo sapiens

<400> 300
gcgggaattg atgcggaatt tcgtcatgac agcggctatg aggtgcacca tcagaaactg 60
gttttctttg ccgaagatgt cg 82

<210> 301
<211> 83
<212> DNA
<213> Homo sapiens

<400> 301
gcggagctcc gctatgacaa cccacccac cattaagccg ataattgccc ccttggttaga 60
accgacatct tcggcaaaga aaa 83

<210> 302
<211> 53
<212> DNA
<213> Homo sapiens

<400> 302
gcggagctcg ataattgccc ccttggttaga accgacatct tcggcaaaga aaa 53

<210> 303
<211> 31
<212> DNA
<213> Homo sapiens

<400> 303
gcgggaattc tggatgcgga atttcgtcat g 31

<210> 304
 <211> 17
 <212> DNA
 <213> Homo sapiens

<400> 304
 gcggagctcc gctatga 17

<210> 305
 <211> 31
 <212> DNA
 <213> Homo sapiens

<400> 305
 gcgggaattc tggatgcgga atttcgtcat g 31

<210> 306
 <211> 18
 <212> DNA
 <213> Homo sapiens

<400> 306
 gcggagctcg ataattgc 18

<210> 307
 <211> 24
 <212> PRT
 <213> Haemophilus influenzae

<400> 307
 Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
 1 5 10 15
 Cys Arg Cys Asn Asp Ser Ser Asp
 20

<210> 308
 <211> 23
 <212> PRT
 <213> Haemophilus influenzae

<400> 308
 Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Cys
 1 5 10 15
 Arg Cys Asn Asp Ser Ser Asp
 20

<210> 309
 <211> 23
 <212> PRT
 <213> Haemophilus influenzae

<400> 309
 Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Ala
 1 5 10 15

Arg Ala Asn Asp Ser Ser Asp
20

<210> 310
<211> 35
<212> PRT
<213> Haemophilus influenzae

<400> 310
Met Gly Ile Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu
1 5 10 15

Trp Gly Cys Arg Cys Asn Asp Ser Ser Asp Glu Leu Leu Gly Trp Leu
20 25 30

Trp Gly Ile
35

<210> 311
<211> 35
<212> PRT
<213> Haemophilus influenzae

<400> 311
Met Gly Ile Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu
1 5 10 15

Trp Gly Cys Arg Cys Asn Asp Ser Ser Asp Glu Leu Leu Gly Trp Leu
20 25 30

Trp Gly Ile
35

<210> 312
<211> 23
<212> PRT
<213> Influenza A virus

<400> 312
Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Ala
1 5 10 15

Arg Ala Asn Asp Ser Ser Asp
20

<210> 313
<211> 19
<212> PRT
<213> Influenza A virus

<400> 313
Glu Gln Gln Ser Ala Val Asp Ala Asp Asp Ser His Phe Val Ser Ile
1 5 10 15

Glu Leu Glu